

**BORING LOG**PROJECT
METCALF ENERGY CENTERJOB NO.
24193-100SHEET NO.
1 OF 3HOLE NO.
B-110

SITE STACK		COORDINATES N 1,905,345.79; E 6,198,746.24				ANGLE FROM HORIZ. 90°		BEARING	
BEGUN 4/26/1999	COMPLETED 4/27/1999	DRILLER TREATWELL & ROLLO (PITCHER DRILLING)		DRILL MAKE AND MODEL FAILING 1500	HOLE SIZE 4 3/4	OVERBURDEN 101.5	ROCK	TOTAL DEPTH 101.5	
CORE RECOVERY		CORE BOXES NONE		SAMPLES 24	EL. TOP OF CASING	GROUND EL. 249.78	DEPTH/EL. OF GWT		DEPTH/EL. TOP OF ROCK
SAMPLE HAMMER WEIGHT/FALL 140 # \ 30 INCHES				CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: KR BELL		

SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS "N" PERCENT CORE RECOVERY	PENETRATION BLOWS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVEL WATER RETURN CHARACTER OF DRILLING
				1ST 6 INCHES	2ND 6 INCHES	3RD 6 INCHES						
SS	18"	9"	9	5	5	4				1	Dark brown, medium stiff, SILT	0-2.5" 6" diameter
												auger, below 2.5'
												wash boring with
SS	18"	14"	6	3	3	3		5		2	Dark brown, medium stiff, SILT	drilling mud
SS	18"	15"	9	2	4	5	242.78			3	Brown, medium stiff, fine sandy SILT	
SS	18"	18"	11	3	5	6		10		4	Brown, medium dense, fine to medium SAND	
SS	18"	12"	29	2	10	19	238.78			5	Top: same	
											Bottom 6": Brown, medium dense silty fine to coarse	
											SAND	
SS	18"	9"	26	9	16	10	235.78			6	Brown, medium dense, silty fine to coarse SAND	
								15				
SS	18"	10"	26	11	14	12				7	Brownish gray, medium dense, fine to coarse	
											SAND and GRAVEL	
								20				
SS	18"	10"	33	15	13	20				8	Brownish gray, dense, fine to coarse SAND and	
											GRAVEL	
								25				
SS	18"	12"	22	12	9	13	223.78			9	Top: same	
											Bottom,: Brown and gray, mottled, very stiff, silty CLAY	
								30				
SS	18"	12	18	6	7	11	217.78			10	Gray, very stiff CLAY	
												Gravels at 32'
								35				

SS = SPLIT SPOON; ST = SHELBY TUBE; MCS = MODIFIED CALF. SAMPLER
D = DENNISON; P = PITCHER; O = OTHERSITE
STACKHOLE NO.
B-110

FIGURE 10G4-4

**BORING LOG**PROJECT
METCALF ENERGY CENTERJOB NO.
24193-100SHEET NO.
2 OF 3HOLE NO.
B-110

SITE STACK		COORDINATES N 1,905,345.79; E 6,198,746.24				ANGLE FROM HORIZ. 90°		BEARING	
BEGUN 4/22/1999	COMPLETED 4/27/1999	DRILLER TREATWELL & ROLLO (PITCHER DRILLING)			DRILL MAKE AND MODEL FAILING 1500	HOLE SIZE 4 3/4	OVERBURDEN 101.5	ROCK	TOTAL DEPTH 101.5
CORE RECOVERY		CORE BOXES NONE		SAMPLES 24	EL. TOP OF CASING	GROUND EL. 249.78	DEPTH/EL. OF GWT		DEPTH/EL. TOP OF ROCK
SAMPLE HAMMER WEIGHT/FALL 140 # \ 30 INCHES				CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: KR BELL		

SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS "N" PERCENT CORE RECOVERY	PENETRATION			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVEL WATER RETURN CHARACTER OF DRILLING	
				BLOWS									
				1ST 6 INCHES	2ND 6 INCHES	3RD 6 INCHES							
SS	18"	8"	38	11	20	18				11	Brownish gray, dense, fine to coarse, SAND and GRAVEL		
								40					
SS	18"	0	35	7	11	24				12	(No recovery)		
								45					
SS	18"	10"	32	10	12	21				13	Browish gray, dense, fine to coarse, SAND and GRAVEL, 2" brownish red sand seam in middle of sample		
							199.78	50					
SS	18"	12"	47	11	21	23	198.78				14	Brownish black, dense, medium to coarse SAND Tip material, Brownish gray, dense, fine to coarse SAND and GRAVEL	
								55					
SS	18"	12"	53	22	25	28					15	Brownish gray, very dense, fine to coarse, SAND and GRAVEL	
								60					
SS	18"	0"	31	11	13	18			16		(No recovery)		
							187.78						
								65				Drilling progress increased at 62'	
SS	18"	18"	64	17	29	35			17		Brown, hard, silty CLAY, trace fine rounded black gravel		
								70					

SS = SPLIT SPOON; ST = SHELBY TUBE; MCS = MODIFIED CALF. SAMPLER

SITE

HOLE NO.

D = DENNISON; P = PITCHER; O = OTHER

STACK

B-110

FIGURE 10G4-4

**BORING LOG**PROJECT
METCALF ENERGY CENTERJOB NO.
24193-100SHEET NO.
3 OF 3HOLE NO.
B-110

SITE STACK		COORDINATES N 1,905,345.79; E 6,198,746.24				ANGLE FROM HORIZ. 90°		BEARING	
BEGUN 4/22/1999	COMPLETED 4/27/1999	DRILLER TREATWELL & ROLLO (PITCHER DRILLING)			DRILL MAKE AND MODEL FALLING 1500	HOLE SIZE 4 3/4	OVERBURDEN (FT) 101.5	ROCK	TOTAL DEPTH 101.5
CORE RECOVERY		CORE BOXES NONE		SAMPLES 24	EL. TOP OF CASING	GROUND EL. 249.78	DEPTH/EL. OF GWT		DEPTH/EL. TOP OF ROCK
SAMPLE HAMMER WEIGHT/FALL 140 # \ 30 INCHES				CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: KR BELL		

SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY	CORE RECOVERY	SAMPLE BLOWS "N" PERCENT CORE RECOVERY	PENETRATION			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVEL WATER RETURN CHARACTER OF DRILLING
					BLOWS								
					1ST 6 INCHES	2ND 6 INCHES	3RD 6 INCHES						
SS	18"	0"		45	15	19	26				18	(No recovery- Gravel in tip of spoon)	
									75				
SS	18"	0"		26	7	12	14				19	(No recovery)	
									80				
SS	18"	18"		50	14	24	26				20	Brown, hard, silty CLAY	
									85				
SS	18"	18"		33	7	17	19				21	Brown, hard, silty, CLAY, trace fine rounded black gravel	
									90				
SS	18"	18"		15	5	7	8				22	Light brown, medium stiff, silty CLAY	
									95				
SS	18"	18"		29	5	9	20				23	Brown, very stiff, silty CLAY, some fine rounded black gravel	
									100				
SS	18"	18"		73	41	43	30				24	Brown, hard, silty CLAY	
												Bottom of hole at 101.5 feet. Hole grouted to surface upon completion of drilling.	
									105				

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FIGURE 10G4-4